USGS
science for a changing world

Earthquake
Shaking

Green
Alert

GSN
USAID
FROM THE AMERICAN PEOPLE
ANSS

M 6.9, eastern New Guinea region, Papua New Guinea

Origin Time: 2023-10-07 08:40:11 UTC (Sat 18:40:11 local)
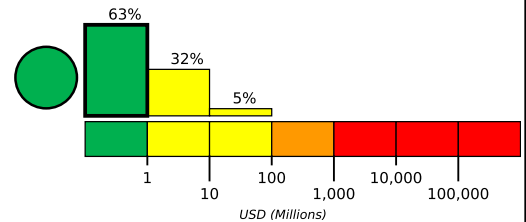Location: 5.4773° S 146.1215° E Depth: 53.9 km

PAGER
Version 5

Created: 1 week, 6 days after earthquake

Estimated Fatalities

Green alert for shaking-related fatalities and economic losses. There is a low likelihood of casualties and damage.
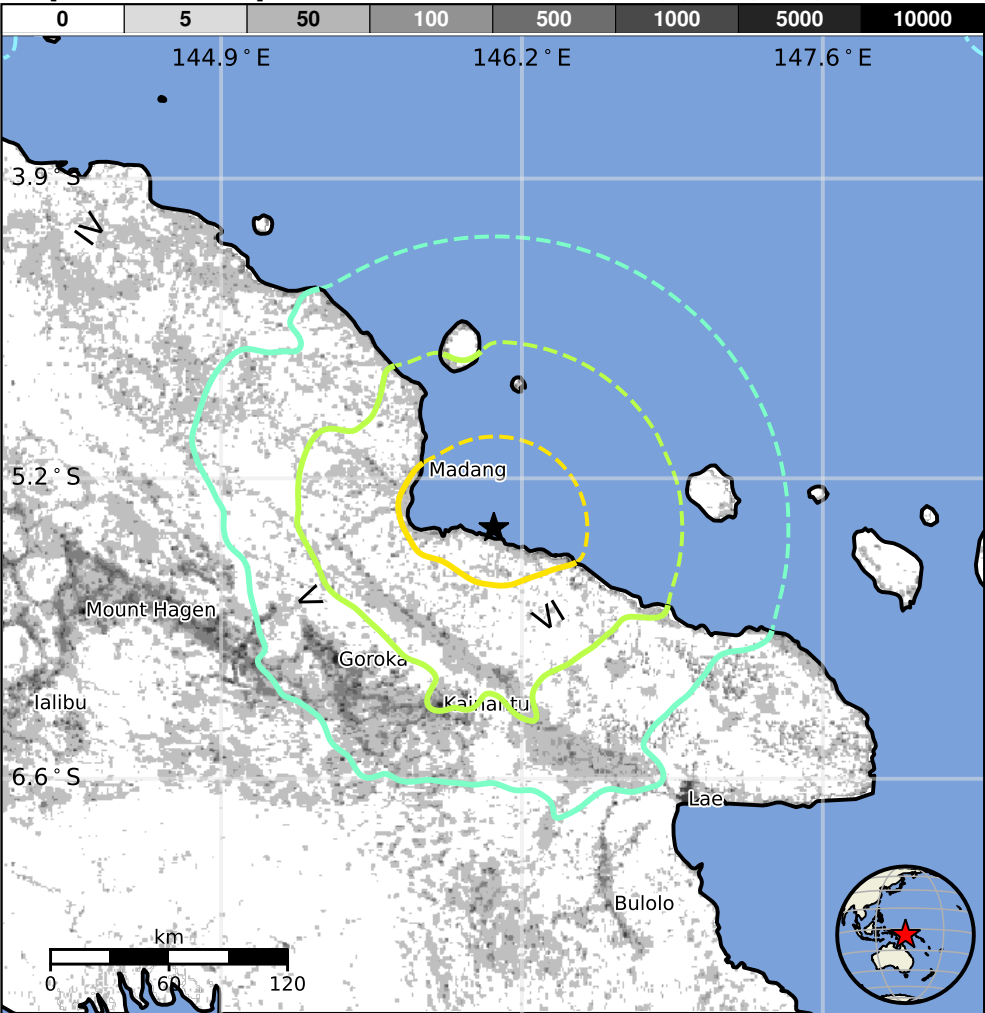
65%
30%
4%

1   10   100   1,000   10,000   100,000
Fatalities

Estimated Economic Losses

63%
32%
5%

1   10   100   1,000   10,000   100,000
USD (Millions)

Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k=x1000)		–*	–*	2,032k	867k	288k	139k	0	0	0
ESTIMATED MODIFIED MERCALLI INTENSITY		I	II-III	IV	V	VI	VII	VIII	IX	X+
PERCEIVED SHAKING		Not felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	Resistant Structures	None	None	None	V. Light	Light	Moderate	Mod./Heavy	Heavy	V. Heavy
	Vulnerable Structures	None	None	None	Light	Moderate	Mod./Heavy	Heavy	V. Heavy	V. Heavy

*Estimated exposure only includes population within the map area.

Population Exposure

population per 1 sq. km from Landscan

0	5	50	100	500	1000	5000	10000

Structures

Overall, the population in this region resides in structures that are a mix of vulnerable and earthquake resistant construction. The predominant vulnerable building types are informal (metal, timber, GI etc.) and unreinforced brick masonry construction.

Historical Earthquakes

Date (UTC)	Dist. (km)	Mag.	Max MMI(#)	Shaking Deaths
2005-06-04	123	6.1	VII(27k)	1
1993-08-20	372	6.1	VIII(13k)	0
1993-10-16	47	6.3	VII(75k)	3

Recent earthquakes in this area have caused secondary hazards such as landslides and liquefaction that might have contributed to losses.

Selected City Exposure

from GeoNames.org

MMI	City	Population
VII	**Madang**	**27k**
VI	**Kainantu**	**9k**
V	**Goroka**	**19k**
V	Kundiawa	9k
IV	Minj	<1k
IV	**Lae**	**76k**
IV	**Bulolo**	**16k**
IV	**Mount Hagen**	**34k**
IV	**Ialibu**	**7k**
IV	Wau	15k
IV	Angoram	2k

bold cities appear on map.   (k = x1000)

PAGER content is automatically generated, and only considers losses due to structural damage.
Limitations of input data, shaking estimates, and loss models may add uncertainty.
https://earthquake.usgs.gov/earthquakes/eventpage/us6000ldqf#pager

Event ID: us6000ldqf